ATTACHMENT B
Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-6. (Canceled)

7. (Currently Amended) A hydrocarbon desulfurization method, said method comprising:

desulfurizing a hydrocarbon raw material comprising methane, ethane, propane and butane, in the presence of hydrogen using a sulfur-adsorption type desulfurizing agent manufactured by a method comprising:

mixing a mixture containing a copper compound and a zinc compound with an aqueous solution of an alkali substance to prepare a precipitate,

calcing the resultant precipitate,

forming the calcined precipitate into a shaped form of a copper oxide - zinc oxide mixture,

impregnating the shaped form with iron and/or nickel,

calcining the impregnated form to produce a calcined oxide, and

reducing the calcined oxide with hydrogen to form the sulfur-adsorption type desulfurizing agent,

wherein the desulfurization is performed at a space velocity (GHSV) of 200 to 10,000 h^{-1}.

8. (Previously Presented) The hydrocarbon desulfurization method according to claim 7, wherein the hydrogen present in an amount such that the hydrogen/hydrocarbon raw material molar ratio is 0.0005 to 0.4.

9. (Previously Presented) The hydrocarbon desulfurization method according to claim 7, wherein desulfurization is performed at a pressure of 0.05 to 50 atm, and a temperature of 100 to 400°C.

10. (Original) The hydrocarbon desulfurization method according to claim 7, wherein the raw material hydrocarbon is town gas, and an amount of hydrogen is present so that the hydrogen/town gas molar ratio is 0.0005 to 0.4.

11. (Previously Presented) The desulfurization method according to claim 10, wherein desulfurization is performed at a pressure of 0.05 to 50 atm, and a temperature of 100 to 400°C.

12. (Previously Presented) The desulfurization method according to claim 11, wherein desulfurization is performed so that the sulfur content in the town gas is not more than 5 ppb (vol ppb).

13. (New) A method for producing a sulfur-adsorption type desulfurizing agent, said method comprising:

mixing a mixture containing a copper compound and a zinc compound with an aqueous solution of an alkali substance to prepare a precipitate,

calcing the resultant precipitate,

forming the calcined precipitate into a shaped form of a copper oxide - zinc oxide mixture,

impregnating the shaped form with iron and/or nickel,

calcining the impregnated form to produce a calcined oxide, and

reducing the calcined oxide with hydrogen, to form the sulfur-adsorption type desulfurizing agent,

wherein the sulfur-adsorption type desulfurizing agent adsorbs sulfur present in hydrocarbons, when exposed to the hydrocarbons in the presence of hydrogen.

14. (New) The method of claim 13, further comprising washing the precipitate with water prior to calcing the resultant precipitate.

15. (New) The method of claim 13, further wherein the impregnating the shaped form with iron and/or nickel, comprises impregnating with iron and/or nickel in the range of 1 to 10 wt %.

16. (New) A hydrocarbon desulfurization method, said method comprising:

mixing a mixture containing a copper compound and a zinc compound with an aqueous solution of an alkali substance to prepare a precipitate,

calcing the resultant precipitate,

forming the calcined precipitate into a shaped form of a copper oxide - zinc oxide mixture,

impregnating the shaped form with iron and/or nickel,

calcining the impregnated form to produce a calcined oxide,

reducing the calcined oxide with hydrogen, to form a sulfur-adsorption type desulfurizing agent, and

desulfurizing a hydrocarbon raw material comprising methane, ethane, propane and butane, in the presence of hydrogen using the desulfurizing agent.

17. (New) The method of claim 16, wherein the desulfurization is performed at a space velocity (GHSV) of 200 to 10,000 h^{-1}.

18. (New) The method of claim 16, wherein the hydrogen is present in an amount such that the hydrogen/hydrocarbon raw material molar ratio is 0.0005 to 0.4.

19. (New) The method to claim 16, wherein desulfurization is performed at a pressure of 0.05 to 50 atm, and a temperature of 100 to 400 °C.

20. (New) The method according to claim 16, wherein the raw material hydrocarbon is town gas, and an amount of hydrogen is present so that the hydrogen/town gas molar ratio is 0.0005 to 0.4.

21. (New) The method according to claim 20, wherein desulfurization is performed at a pressure of 0.05 to 50 atm, and a temperature of 100 to 400 °C.

22. (New) The method according to claim 21, wherein desulfurization is performed so that the sulfur content in the town gas is not more than 5 ppb (vol ppb).

23. (New) The method of claim 7, wherein the sulfur-adsorption type desulfurizing agent is chemically changed due to the adsorption of sulfur.

24. (New) The method of claim 13, wherein the sulfur-adsorption type desulfurizing agent is chemically changed when the agent adsorbs sulfur.